

a follower pulley 36 is secured to the lower end of the feed screw 21.

A guide bar 37 is arranged so as to extend in parallel to the feed screw 23 and the upper ends of the feed screw 23 and the guide bar 37 are supported by a supporting frame 38. The feed screw 23 is screw-engaged with a supporting ear-like member 39 projecting from the table 2 at the intermediate portion of the feed screw 23 and a follower pulley 40 is secured to the lower end of the feed screw 23.

A tension adjusting pulley 41 is arranged between the aforementioned first and second follower pulleys 36 and 40 and the position of the tension adjusting pulley 41 can be variably adjusted by an adjusting mechanism, not shown. On both sides of the tension adjusting pulley are disposed guide pulleys 42 and 42. A timing belt 43 is stretched about the follower pulley 31, the first and second follower pulleys 36 and 40, and the tension adjusting pulley 41. According to the structure described above, the table 2 can be moved vertically with the horizontal state thereof kept at three positions.

The detector 5 for detecting the vertical height of the table 2 is provided with a detection plate 50 vertically arranged at the rear edge portion of the table 2. The detection plate 50 is provided with many openings O, O, ---, O with predetermined spaces between each other and a photosensor 51 of transmission type is supported by a fixing member, not shown, opposite to the openings. When the photosensor 51 detects the desired one opening O of the detection plate 50, the motor 25 of the driving mechanism 24 stops.

A magazine transfer device 4 is mounted on one side wall of the casing 1 and comprises a guide bar 60 extending horizontally and a feed screw 61 arranged in parallel to the guide bar 60. A gear 62 is engaged with one end, lefthand end in the illustration of FIG. 2, of the feed screw 61 and a drive gear 62 of an electric motor 63 is engaged with the gear 62. Both ends of the guide bar 60 and the feed screw 61 are supported by supporting plates 65 respectively. A movable member 66 is mounted to the guide bar 60 to be movable horizontally with respect to the guide bar 60 and the feed screw 61. The movable member 66 is provided with a transfer arm 66a for transferring the magazine accommodated in the magazine holder 3 when the transfer arm 66a abuts against the rear end of the magazine and provided with an operation arm 66b for operating limit switches 1₁ and 1₂ for limiting the moving range of the movable member 66.

The eject operating mechanism 6 is mounted on another side wall, opposing to the side wall of the casing 1 on which the magazine transfer mechanism 4 is mounted. The eject operating mechanism 6 comprises an L-shaped operating plate 67 having a front end 67a opposing to the eject switch 110 provided on the front surface of the disk player body D₀ (FIG. 1). The operating plate 67 also has a wide portion in which a slit 68 is formed. With the slit 68 is engaged a guide pin 69 secured to the side wall of the casing 1, and the operating plate 67 is moved along the guide pin 69 to operate the eject switch 110. The operating plate 67 is urged rearwardly, i.e. rightwardly in the illustration, by a spring means 70. An engaging projection 67b is formed on the upper edge of the operating plate 67 and a pin 71a of a rotary gear 71 is engaged with the engaging projection 67b. The rotary gear 71 is rotated in a counterclockwise direction in the illustration of FIG. 2 by a worm 72a of an electric motor 72, whereby the pin 71b engages with

the projection 67b to push the same or disengages therefrom so as to reciprocate the operating plate 67 in the horizontal direction.

The details of the magazine holder 3 mounted on the table 2 is illustrated in FIG. 3. Referring to FIG. 3, the magazine holder 3 and FIG. 4 is generally of a box-shaped configuration having a top plate 120 equipped with a handle 124, a bottom plate 121, and a plurality of shelf plates 122 and 123 between the top and bottom plates 120 and 121 with spaces S₁, S₂ and S₃ therebetween into which the magazines 103 are slidably mounted. The rear portions of the respective spaces S₁, S₂ and S₃ are defined by end plates 125, 125 and 125 to which magnet means 126, 126 and 126 are mounted respectively for the purpose of stably holding the magazines 103 in the respective spaces by the magnetic engagement of the magnets with metal portions 103a applied to the rear end portions of the magazines 103 as shown in FIG. 5.

Each of the rear end plate 125 is provided with an opening 125a at the right end portion, as viewed in FIG. 4, which opposes to the transfer arm 66a of the movable member 66 of the transfer mechanism 4. The transfer arm 66a is provided with a front surface on which is also mounted a magnet 66c which acts to push out the magazine 103 in the magazine holder 3 or firmly hold the rear end of the magazine transferred from the disk player body D₀.

Positioning projections 130 and 130 are provided for the surface of the bottom plate 121 of the magazine holder 3 as shown in FIG. 6 and the positioning projections 130 are adapted to engage with the positioning holes 2a of the table 2 shown in FIG. 2 to position the magazine holder 3 on the table 2.

The disk player system provided with a magazine changing unit according to this invention of the character described above will operate in the following manner.

For example, referring to FIG. 7, in a case where it is desired to mount the magazine 103 disposed on the intermediate shelf of the magazine holder 3 in the magazine accommodating portion 140 of the disk player body D₀, an operator pushes a switch on the control board to select the intermediate magazine shelf. The table 2 moves and when the intermediate magazine 103 is moved to a position opposing to the magazine insertion port 102 of the disk player body D₀, i.e. when the sensor 51 of the detector 50 detects one opening O corresponding to the desired stop position of the table 2, the table 2 stops (FIG. 7A). The movable member 66 of the transfer mechanism 4 is then moved forwardly till the transfer arm 66a of the movable member 66 abuts against the rear end surface of the magazine 103. At this moment, the magnet 66c secured to the front end of the transfer arm 66a magnetically fixes the metal plate 103a secured to the rear end of the magazine 103 to firmly hold the same. The movable member 66 advances and the magazine 103 is pushed into the magazine accommodating member 140 (FIG. 7B).

The insertion of the magazine 103 into the magazine accommodating member 140 is controlled by a vibration proof mechanism (vibration proof rubber 107 and spring 108) shown in FIG. 10 in a damped manner, so that any damper mechanism is not needed in addition to the members of the conventional disk player.

When the accommodation of the magazine 103 in the magazine accommodating member 140 has been completed, the operating arm 66c of the movable member 66